7000B/7010 Method Criteria
2/13/2007

This document was prepared by the Arizona lab licensure program for guidance purposes only. The laboratory staff must read SW846 Methods 7010 and 7000B to determine all the requirements of the method before running compliance samples.

1. Calibration

   a. A calibration curve must be prepared each day with a minimum of a calibration blank and three standards. The curve must be linear and have a correlation coefficient of at least 0.995. (7000B & 7010, 10.2).
   b. ICV, after calibration, mid-level second source and be within ±10% (7000B & 7010, 10.2.1). ICB is supposed to be <MDL.
   c. CCV, mid level same source, every 10 samples and end of the run within ±10% (7000B & 7010, 10.2.2). CCB is supposed to be <MDL.
   d. Recommended that each standard should be analyzed (injected) twice and an average value determined. Replicate standard values should be within ±10% RPD. (7000B & 7010, 10.3).
   e. Recommended that the lowest calibration standard be set at the laboratory's quantitation level. Report <lowest standard in the calib curve as an estimate. (7000B, 10.4 & 7010, 10.5).

2. Quality Control

   a. MS/sample duplicate or MS/MSD pairs must be analyzed with each preparation batch of up to every 20 samples.
      In the absence of historical data this limit should be set at ± 20% of the spiked value for precision and 20 relative percent difference (RPD). If MS not acceptable, and interferences suspected, can follow-up with dilution test or MSA. (7000B & 7010, 9.4).
   b. LCS with each extracted batch. After the determination of historical data, ±20% must still be the limit of maximum deviation to express acceptability. (7000B & 7010, 9.3).
   c. Method blank per batch. In absence of project specific DQOs, < lowest limit of detection, or 10% of sample result for same analyte, whichever is greater (7000B & 7010, Section 9.2).**
   d. Recovery test (post-digestion spike) - The recovery test must be done on every sample*. If the recovery is <85% or >115%, MSA should be used for the sample (7010, Section 9.5.1).
      Recovery test (post-digestion spike) - The recovery test must be done on all samples within a batch that fail that batch's MS/MSD. If the recovery is less than 85% or greater than 115%, the method of standard additions should be used for all samples in the batch. (7000B, Section 9.5.1).
   e. Dilution Test- Performed when interferences are suspected.* When sample value is high enough perform a five fold dilution and a <10% RPD should result between the two final values. If RPD is >10%, then MSA should be used on each sample in the batch (7010, 9.5.2 & 7000C, 8.6.1).
   f. Recommended that each standard should be analyzed (injected) twice and an average value determined. Replicate standard values should be within ±10% RPD. (7000B & 7010, 10.3).

g. Different integration times must not be used for samples and standards. (7000B, 12.1.3).
h. Different injection volumes must not be used for samples and standards. (7010, 12.1.3)

**MICE clarified that post-digestion spikes or dilution checks are required when the MS fails.*
***ADHS allows the MB acceptance criteria to be < RL*